REMARKS

The Office Action dated March 17, 2006, has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claims 2 and 13 have been canceled and claims 1, 4-6, 12 and 15-17 have been amended. Support for the amendments to claims 1 and 12 can be found in canceled claims 2 and 13 and page 8, line 25 to page 9, line 1 of the specification as originally filed. No new matter has been added. Claims 1, 3-12 and 14-22 are pending and respectfully submitted for consideration.

Rejections Under 35 U.S.C. § 102

Claims 1, 3, 8, 9, 11, 12, 14, 19, 20 and 22 were rejected under 35 U.S.C. § 102(b) as being anticipated by Iizuka (U.S. Patent No. 4,188,933). Claims 1 and 12 have been amended. Claims 3, 8, 9 and 11 depend from claim 1, and claims 14, 19, 20 and 22 depend from claim 12. The Applicants traverse the rejection and respectfully submit that claims 1, 3, 8, 9, 11, 12, 14, 19, 20 and 22 recite subject matter that is neither disclosed nor suggested by Iizuka.

Claim 1, as amended, recites a system for controlling an internal combustion engine having a plurality of cylinders and mounted on a vehicle, comprising an engine operation controller that conducts a switching control of engine operation based on a load of the engine between a full-cylinder operation in which all of the cylinders are operative and a cut-off cylinder operation in which some of the cylinders are inoperative. A running controller conducts a running control of the vehicle including at least one of a

cruise control in which the vehicle runs at a desired vehicle velocity and a preceding vehicle follow-up control in which the vehicle runs at a desired vehicle velocity to maintain a desired inter-vehicle distance from a preceding vehicle. The engine operation controller switches engine operation to the full-cylinder operation if it is determined that deceleration is required by the running controller when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control.

Claim 12, as amended, recites a method of controlling an internal combustion engine having a plurality of cylinders and mounted on a vehicle. The steps include conducting a switching control of engine operation based on a load of the engine between a full-cylinder operation in which all of the cylinders are operative and a cut-off cylinder operation in which some of the cylinders are inoperative. A running control of the vehicle is conducted including at least one of a cruise control in which the vehicle runs at a desired vehicle velocity and a preceding vehicle follow-up control in which the vehicle runs at a desired vehicle velocity to maintain a desired inter-vehicle distance from a preceding vehicle. The step of engine operation control switches engine operation to the full-cylinder operation if it is determined that deceleration is required by the step of running control when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control.

Iizuka discloses an apparatus for controlling the operation of inlet and exhaust valves and the supply of fuel to selected cylinders of all of a multi-cylinder internal combustion engine. The inlet and exhaust valves for induction and exhaust of the selected cylinders of all are closed and the supply of fuel to them is cut off to operate

the engine on the remaining cylinders of all. A detector to detect a predetermined control event in which the engine is to be decelerated is provided. Also provided is a valve operation restoring device for causing restoration of the disabled valves when the detector detects the predetermined control event to let the disabled cylinders pump air to achieve effective engine braking. See the Abstract of Iizuka.

The Applicants respectfully submit that Iizuka fails to disclose or suggest the claimed features of the invention. Claim 1 recites "engine operation controller switches engine operation to the full-cylinder operation...when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control". Claim 12 recites "the step of engine operation control switches engine operation to the full-cylinder operation... when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control". In contrast, Iizuka discloses solenoid valves 9, 10 and 11 that are associated with three pairs of inlet and exhaust valves for three cylinders, respectively to disable the inlet and exhaust valves to maintain them in fully closed condition when the output from the AND circuit 7 is at a high level signal "1". There is no disclosure or suggestion in Iizuka of switching engine operation to the full-cylinder operation when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control, as recited in claims 1 and 12. The Applicants submit that the claimed invention provides sufficient deceleration by an engine loss (pumping loss) when the cruise or preceding vehicle follow-up control is in progress, since the cut-off cylinder operation occurs during the cruise or preceding vehicle follow-up control.

According to U.S. patent practice, a reference must teach every element of a claim in order to properly anticipate the claim under 35 U.S.C. §102. In addition, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628,631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "Every element of the claimed invention must be arranged as in the claim . . . . . [t]he identical invention must be shown in as complete detail as is contained in the patent claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added). The Applicants respectfully submit that Iizuka does not disclose or suggest the features of the invention as arranged in claims 1 and 12. Accordingly, Iizuka does not anticipate claims 1 and 12, nor are claims 1 and 12 obvious in view of Iizuka. As such, the Applicants submit that claims 1 and 12 are allowable over Iizuka.

Rejections Under 35 U.S.C. § 103

Claims 2, 6, 13 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Jindo et al. (U.S. Patent No. 6,665,603 B2, "Jindo"). Claims 2 and 13 have been canceled, rendering the rejection moot with regard to these claims. Iizuka was cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a speed and/or distance control device which determines a deceleration condition associated with a comparison of velocity of the vehicle and another value under a preceding vehicle following operation. Jindo was cited for curing this deficiency.

Claims 2, 4, 5, 7, 13, 15, 16 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Guest (U.S. Patent No. 6,193,333 B1).

Claims 2 and 13 have been canceled, rendering the rejection moot with regard to these claims. Iizuka was cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a speed and/or distance control device which determines a deceleration condition associated with a comparison of velocity and/or change in velocity of the vehicle with target velocity and change of velocity values, and a road gradient. Guest was cited for curing this deficiency.

Claims 10 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Isogai et al. (U.S. Patent No. 6,594,574 B2, "Isogai"). Iizuka was cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a fuel-cut control device which determines a deceleration condition. Isogai was cited for curing this deficiency.

To the extent that the above-noted rejections remain applicable to the claims currently pending, the Applicants traverse the rejections and respectfully submit that claims 4-7 and 15-18 recite subject matter that is neither disclosed nor suggested by the cited references. Claims 4-7 depend from independent claim 1 and claims 15-18 depend from independent claim 12.

Claims 1 and 12 recite that the engine operation controller switches engine operation to the full-cylinder operation if it is determined that deceleration is required by the running controller when the running controller conducts at least one of a cruise control and the preceding vehicle follow-up control.

Jindo discloses a vehicle traveling control system installed to a host vehicle 1 and comprises a following controller 4 for executing a following control relative to a

preceding vehicle or object and a lane-keeping controller 5 for executing a lane-keeping control including a steering control of host vehicle 1. See column 2, lines 19-25 of Jindo.

Guest discloses a vehicle brake control wherein when an activation switch 32 is switched on by the driver to select hill descent mode, the electronic control unit takes active control of the vehicle's speed, controlling the application and release of the brakes to limit the vehicle's speed. The electronic control unit 22 has stored in memory a fixed minimum target speed associated with each gear of the vehicle transmission, the speeds increasing for higher gears from about 7 kph for the first gear up to about 14 kph for the fifth gear. The control unit is also arranged to operate the brakes to control the acceleration and deceleration rate of the vehicle to keep it to safe limits, both when the system is first activated, and when it is changing the speed of the vehicle as a result of a change of gear by the driver. See column 2, line 60 to column 3, line 13 of Guest.

Isogai discloses an inter-vehicle distance control apparatus and recording medium for the same. Fig. 9 of Isogai discloses that if a fuel cut is being requested, the inter-vehicle distance control unit ECU 2 judges whether the braking is being requested. If the braking is not being requested, the inter-vehicle distance control unit ECU 2 judges whether the acceleration deviation is lower than a reference value in step S945. If the acceleration deviation is less than a reference value, the inter-vehicle distance control unit ECU 2 judges that the braking request is established in step S947 and processing returns to the deceleration request judging subroutine S900. See column 9, lines 51-64 of Isogai.

None of Jindo, Guest and Isogai discloses or suggests that the cut-off cylinder operation occurs during the cruise or preceding vehicle follow-up control. As such, Jindo, Guest and Isogai fail to cure the deficiencies in Iizuka with respect to claims 1 and 12. Therefore, it would not have been obvious to one of ordinary skill in the art to make the invention recited in claims 1 and 12 by combining the disclosures of Iizuka with Jindo, Guest and Isogai.

Under U.S. patent practice, the PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002). The Office Action restates the advantages of the present invention to justify the combination of references. There is, however, nothing in the applied references to evidence the desirability of these advantages in the disclosed structure.

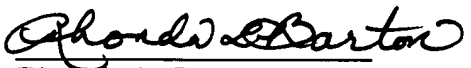
Conclusion

Claims 3-11 depend from claim 1 and claims 14-22 depend from claim 12. The Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above. Accordingly, the Applicants respectfully request withdrawal of the rejections, allowance of claims 1, 3-12 and 14-22, and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney Dkt. No. 107101-00052**.

Respectfully submitted,



Rhonda L. Barton
Attorney for Applicants
Registration No. 47,271

Customer No. 004372
ARENT FOX PLLC
1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 638-4810

RLB/elz